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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,484	10/21/2003	Stefan Dolansky	DOLANSKY	3854

7590 06/21/2006
Henry M. Feiereisen
Suite 4714
350 Fifth Avenue
New York, NY 10118

EXAMINER	
SHAH, KAMINI S	
ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/690,484	Applicant(s) DOLANSKY ET AL.	
	Examiner Russell Frejd	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10.21.03</u> | 6) <input type="checkbox"/> Other: _____ |

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Examination of Application #10/690,484

1. Claims 1-13 of application 10/690,484, filed on 21-October-2003, are presented for examination.

Specification Objections

2. The disclosure is objected to because of the following informalities:

In section 0013, [line 3] "a axis" is understood to mean "an axis".

In section 0026, [line 3] "controller1" is understood to mean "controller 1".

In section 0030, [line 1] "a axis" is understood to mean "an axis".

Claim Rejections under 35 U.S.C. § 112, 2nd Paragraph

3. Claims 1, 2, 4, 6, 8, 9, 10, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, particularly:

In regard to claim 2, [line 12] the phrase "using said desired axis values"; and [line 15] the phrase "being connected for".

In regard to claims 2 and 4, [line 2] the term "the computer" lacks antecedent basis (possibly the auxiliary computer).

In regard to claim 6, the term "a simulation" might be construed to mean "the simulation".

In regard to claim 8, the phrase "is adapted to be".

In regard to claim 9, [line 2] the terms "said machine model" and [line 3] "said auxiliary downstream computer" lack antecedent basis.

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In regard to claim 10, [line 1] the phrase "one of the axes" , [line 2] the phrase "at least one", and [line 5] the phrase "of the axes" could refer to actual or desired axes.

In regard to claim 12, [line 8] the phrase "using said desired axis values"; and [line 13] the phrase "being connected for".

Specification Rejections under 35 U.S.C. § 112, 1st Paragraph

4. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification in sections 0030 and 0031, uses the phrases: "In a manner well known in the art...", "in a suitable manner well known in the art", "in a suitable way well known in the art", to disclose the details for calculating the values of an NC-model 4 of a(n) axis [0030] and a PLC-model 5 for an axis [0031], and therefore, do not enable one of ordinary skill to use applicant's invention.

Claim Rejections under 35 U.S.C. § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5.1 Claims 1-9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by the article authored by Lo, entitled *A Tool-Path Control Scheme for Five-Axis Machine Tools*.

Lo discloses: [claims 1 and 11-13] simulating the mechanical behavior of the mechanism of machine tools or production-line machines having multiple drive controllers for driving multiple axis [p. 87, section 7. Conclusion];

a digital controller producing desired axis values [p. 79, section 1. Introduction];

an auxiliary computer for receiving the desired axis values from the controller [p. 79, Introduction, see "interpolator"]; math model means for calculating actual axis values from the desired axis values using math models of drive controllers of the respective axes, including models of both regulated and unregulated drive controllers [p. 81, section 4. Proposed five-axis control system, especially part (1) a direct-kinematics transformation algorithm that calculates the practical tool position]; a mechanism model for generating a state signal using the actual axis values and supplying the state signal to the digital controller as feedback, thereby simulating both regulated and unregulated axes of the machine [p. 81, section 4, especially parts (2)-(4) of Fig. 6 describing an error model for calculating the deviation, orientation, and tracking-lag errors; a control law eliminating the errors; and a matrix for transforming the control fed back [earlier in the same paragraph] to the axial drives].

In regard to claim 2, computer-numerical control [p. 79, Introduction].

In regard to claims 3-5, a computer performing simulation and emulation of the digital controller that is separate from the auxiliary computer [Fig. 6, the servo controller and the interpolator].

In regard to claim 6, a real-time simulation [p. 79, c. 2, par. 2, p. 87, c. 2, Conclusion].

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In regard to claim 7, increasing a cycle time of the digital controller [p. 84, c. 1, par. 3].

In regard to claim 8, the mechanism model being adapted to be calculated in the auxiliary computer [p. 81, c. 2, par. 2].

In regard to claim 9, computing means for calculating the machine model, separate from the auxiliary downstream computer [Fig. 6, the interpolator and the servo controller].

Claim Objections

6. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response Guidelines

7. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02, 710.02(b)).

7.1 Any response to the Examiner in regard to this non-final action should be

directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, or the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

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Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 12-June-2006

A handwritten signature in black ink, reading "RUSSELL FREJD", is written over a horizontal line.

**RUSSELL FREJD
PRIMARY EXAMINER**